

ABSTRACT

A stainless steel pipe for use in oil wells is proposed which has a high strength having a YS of 654 MPa or more and superior corrosion resistance even in a severe corrosive environment in which CO₂ and Cl⁻ are present and the temperature is high, such as up to 230°C. As specific solution means, a pipe contains on a mass percent basis: 0.005% to 0.05% of C; 0.05% to 0.5% of Si; 0.2% to 1.8% of Mn; 0.03% or less of P; 0.005% or less of S; 15.5% to 18% of Cr; 1.5% to 5% of Ni; 1% to 3.5% of Mo; 0.02% to 0.2% of V; 0.01% to 0.15% of N; 0.006% or less of O; and the balance being Fe and unavoidable impurities, in which $\text{Cr} + 0.65\text{Ni} + 0.6\text{Mo} + 0.55\text{Cu} - 20\text{C} \geq 19.5$ and $\text{Cr} + \text{Mo} + 0.3\text{Si} - 43.5\text{C} - 0.4\text{Mn} - \text{Ni} - 0.3\text{Cu} - 9\text{N} \geq 11.5$ are satisfied (where Cr, Ni, Mo, Cu, C, Si, Mn, and N represent the respective contents on a mass percent basis). In addition, quenching treatment and tempering treatment are preferably performed, so that the pipe preferably has a texture containing a martensite phase as a primary phase and 10 to 60 percent by volume of a ferrite phase, or further containing 30 percent by volume or less of an austenite phase. Furthermore, at least one of Al, Cu, Nb, Ti, Zr, W, B, and Ca may also be contained.